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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/673,832      | 09/01/2000  | Matty J. Hartogs     | 11371               | 5806             |

321 7590 07/17/2003

SENNIGER POWERS LEAVITT AND ROEDEL  
ONE METROPOLITAN SQUARE  
16TH FLOOR  
ST LOUIS, MO 63102

EXAMINER

BARR, MICHAEL E

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1762

DATE MAILED: 07/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/673,832

Applicant(s)

HARTOGS ET AL.

Examiner

Michael Barr

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 9-15, 17, 18, 26-28, 40-48 and 57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-15, 17, 18, 26-28 and 57 is/are allowed.
- 6) ☒ Claim(s) 40 and 43-48 is/are rejected.
- 7) ☒ Claim(s) 41 and 42 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☒ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments and amendments, filed 6/20/03, have been fully considered and reviewed by the examiner. The examiner acknowledges the cancellation of Claims 16, 19-25, 29-39, and 49-56. Claims 9-15, 17-18, 26-28, 40-48, and 57 are pending.

The applicant has argued against the Schneble reference indicating that it does not teach using copper oxide as an electroless plating catalyst and that the copper oxide is merely a reactant to form copper. The examiner is not persuaded by the applicant's arguments. Schneble teaches that the exposed copper oxide is activated with an acid, such as sulfuric acid, which forms copper, which provides active sites which readily accept the autocatalytic (electroless) deposition, and then electrolessly plating the shaped body with an autocatalytic plating bath, such as an electroless copper bath, to form copper circuitry (Pg. 2-Pg. 3). Therefore, it is the examiner's position that the copper oxide in Schneble meets the claimed catalyst requirement, as the copper oxide provides the catalyst sites for the autocatalytic plating bath by the acid activation, which is also what is being claimed.

The applicant argues against the Mance indicating that it does not teach or suggest the claimed catalytic filler or acid activation of the catalyst. The examiner is not persuaded by this argument. Mance is merely being relied upon by the examiner to show a conventional electroless copper bath for providing copper circuitry. Schneble is open to the use any conventional electroless copper plating bath. Therefore, it would have been obvious to one skilled in the art to use any conventional electroless copper plating bath for use of forming

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circuitry, in Schneble, with the expectation of providing the desired results. The teaching of Mance shows plating initiation in less than 5 minutes and copper plating for the circuitry of more than 20 microns. It is the examiner's position that it would have been obvious to one skilled in the art to use the conventional electroless copper plating bath and process of Mance to apply the electroless copper circuitry in Schneble, with the expectation of providing the desired copper circuitry plating, since it is shown by Mance that such a plating bath and process is typically used for such a copper plating for forming circuitry on a copper activated/catalyst surface, which is analogous to that of Schneble. Such a modification in Schneble would have been expected to achieve the claimed plating initiation time, rate of plating, or plating thickness, as it had in Mance.

The applicant argues against the Krulik reference indicating that it is not an electroless plating process. The examiner is not persuaded as the examiner is not relying on Krulik to teach an electroless plating feature. Krulik is merely relied upon to teach a conventional method and material to etch the surface of a resin circuit board. It is the examiner's position that it would have been obvious to one skilled in the art to use an alkaline solution, such as that of Krulik, to remove the resin from the shaped body of Schneble, with the expectation providing the desired resin removal, since it is shown by Krulik that alkaline solutions are known for resin etching of circuit boards, which is the desire of Schneble.

The applicant has argued that unexpected results are achieved using the combination of an alkaline etching and acid activation. The examiner is not convinced by the showing the specification. There is no indication in the specification that such a combination is critical or achieves superior results over other etching and activation means combinations. The

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specification does not show that the use specifically of an alkaline solution to remove at least part of the surface material of the shaped body provide any unexpected results over the use of any other type of solution or etchant.

***Priority***

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Europe on 7/16/99. It is noted, however, that applicant has not filed a certified copy of the European application as required by 35 U.S.C. 119(b). ***A copy of the certified copy is requested to prevent unnecessary processing delays in the future.*** The present application does not contain a copy of the request concerning filing under 35 USC 371, form PCT/DO/EO/1390 or PTO-1390. ***It is requested that the applicant submit a copy of this paper to be placed in the file to prevent unnecessary processing delays in the future.***

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 40, 43-45, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneble in view of Krulik.

Schneble and Krulik are applied here for the same reasons as given above and in paragraph 7 of the previous office action.

6. Claims 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneble and Krulik, as applied to Claim 40, and further in view of Mance.

Schneble, Krulik, and Mance are applied here for the same reasons as given above and in paragraphs 6-7 of the previous office action.

***Allowable Subject Matter***

7. Claims 9-15, 17-18, 26-28, and 57 are allowed.

8. Claims 41-42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

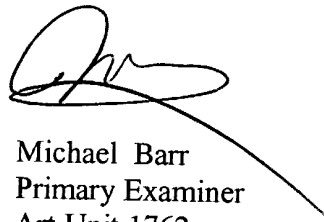
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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Barr whose telephone number is 703-305-7919. The examiner can normally be reached on Monday-Thursday 6:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 or 703-305-5408 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Michael Barr  
Primary Examiner  
Art Unit 1762

MB  
July 15, 2003